

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date
10 March 2005 (10.03.2005)

PCT

(10) International Publication Number
WO 2005/022591 A3

(51) International Patent Classification⁷: **H01L 21/44**

(21) International Application Number:
PCT/US2004/026790

(22) International Filing Date: 18 August 2004 (18.08.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/497,829 26 August 2003 (26.08.2003) US

(71) Applicant (for all designated States except US): ADVANCED INTERCONNECT TECHNOLOGIES LIMITED [MU/MU]; c/o Valmet (Mauritius) Limited, 608 St. James Court, St. Denis Street, Port Louis (MU).

(72) Inventors; and

(75) Inventors/Applicants (for US only): ISLAM, Shafidul [US/US]; 3829 Lakedale Drive, Plano, TX 75025 (US). SAN ANTONIO, Romarico, Santos [PH/ID]; Taman Duta Mas, Block A03-9, Batam Center, Batam Island 29433 (ID).

(74) Agents: OLSON, Timothy, J. et al.; Wiggin and Dana LLP, One Century Tower, P.O. Box 1832, New Haven, CT 06508-1832 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM,

AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

(88) Date of publication of the international search report:
20 October 2005

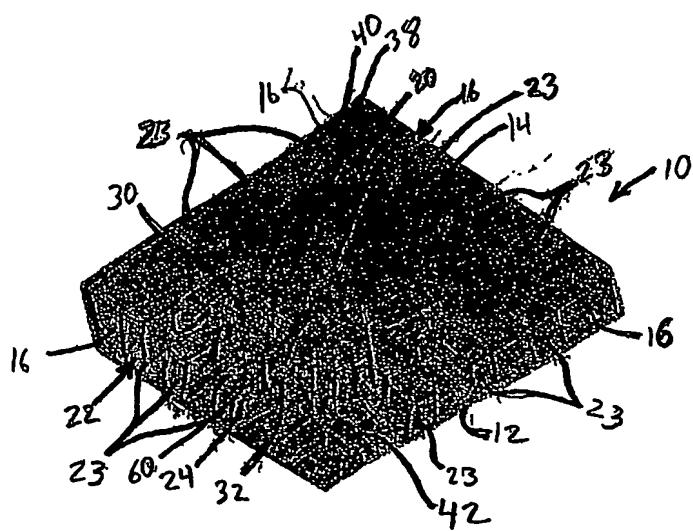
(15) Information about Correction:

Previous Correction:

see PCT Gazette No. 22/2005 of 2 June 2005, Section II

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: REVERSIBLE LEADLESS PACKAGE AND METHODS OF MAKING AND USING SAME



(57) Abstract: A semiconductor device package includes an electrically conductive lead frame having a plurality of posts disposed at a perimeter of the package. Each of the posts has a first contact surface disposed at the first package face and a second contact surface disposed at the second package face. The lead frame also includes a plurality of post extensions disposed at the second package face. Each of the post extensions includes a bond site formed on a surface of the post extension opposite the second package face. At least one I/O pads on the semiconductor device is electrically connected to the post extension at the bond site using wirebonding, tape automated bonding, or flip-chip methods. The package can be assembled using a lead frame having pre-formed leads, with or without taping, or it can employ the use of partially etched lead frames. A stack of the semiconductor device packages may be formed.

WO 2005/022591 A3